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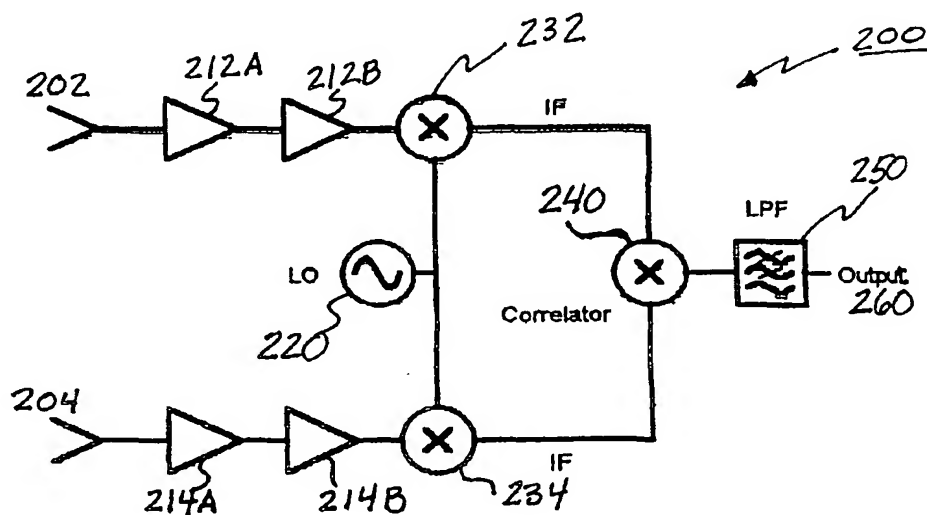
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[Continued on next page]

(54) Title: REAL-TIME, CROSS-CORRELATING MILLIMETRE-WAVE IMAGING SYSTEM



(57) Abstract: A method and apparatus are disclosed for forming an image from millimetre waves. A field of view scanned using two geometrically orthogonal, intersecting copolarized fan beams (110, 120) to receive millimetre wave radiation. The received millimetre wave radiation from said fan beams are then cross-correlated (250, 650). Also, a method and antenna (400, 610) for receiving millimetre wave radiation are disclosed. The antenna includes first and second fan beam antennas (410, 420) for receiving millimetre wave radiation and a filter (430, 440) for rotating polarization of incident millimetre wave radiation through 90 degrees received by the second fan beam antenna (410). The respective first and second beams (110, 120) intersect and are co-polarized and geometrically orthogonal to each other. Still further, a millimetre wave imaging system (600) and method are also disclosed, which utilise an antenna (610) for receiving millimetre wave radiation, process the received millimetre wave radiation from the antenna (610), and build up the image (682) using a filtered, cross-correlated signal.

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU03/00897

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. H01Q 3/08, 21/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPAT, USPTO, Esp@cenet, IEEEExplore - keywords (millimeter wave, cross correlate, image, orthogonal, scan and the like)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6154174 A (SNIDER et al.) 28 November 2000 col 2 line 23 - col 4 line 10, figure 8	1-36
A	US 6061035 A (KINASEWITZ et al.) 9 May 2000 col 2 lines 11 - 32, figure 2	1-36
A	US 5861839 A (UPTON et al.) 19 January 1999 col 1 line 55 - col 2 line 33, figures 1 & 3	1-36



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU03/00897

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member	
US	6154174	WO	00/63720
US	6061035	NONE	
US	5861839	FR	2763428
		GB	2325570
		JP	10-332824
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